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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,155	10/31/2001	Aleksandre Shulga	1-15517	9188

7590 02/19/2004  
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EXAMINER
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LEE, SHUN K

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

09/936,155

Applicant(s)

SHULGA ET AL.

Examin r

Shun Lee

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0901</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***National Stage Application***

1. The International Preliminary Examination Report that is not in the English language in International Application PCT/DE00/00746 is acknowledged.

MPEP § 1893.03(e).

### ***Information Disclosure Statement***

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Claim Objections***

3. Claims 10 and 17 are objected to because of the following informalities:
  - (a) in claim 10, "t = T" on line 2 should probably be --t = τ--; and
  - (b) in claim 17, "at least one of " on line 1 should probably be deleted.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 20 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 20 recites the limitation "turning off the pulse such that the maximum value of the first derivative of the measurement signal is reached within the pulse duration". However, the specification fails to describe how to determine the concentration of a gas by turning off the pulse.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: at least one wavelength-selecting element and at least one detector element to other elements.

8. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2, the phrase "especially" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by McCaughey *et al.* (WO 96/17239).

In regard to claim 1, McCaughey *et al.* disclose (Figs. 1, 2, and 4) an infrared gas sensor with an energy supply apparatus (13) for operating at least one radiation source (12) with current or voltage pulses, with at least one measurement area (10) disposed in the beam path, with at least one wavelength-selecting element (15), with at least one detector element (14) emitting an electrical measurement signal (pg. 5, lines 28-32) and with a switching device (36) to control the pulse duration (23) of the current or voltage pulses, wherein the switching device (36) has means for setting the pulse duration (23) in such a way that the current or voltage pulse is turned off in a manner such that the pulse duration (23) is smaller than that required to reach  $T_{MAX}$  (*i.e.*, time to reach the maximum of 21 in Fig. 2) of the at least one measurement signal of the at least one detector element (14).

In regard to claim 2 which is dependent on claim 1, McCaughey *et al.* also disclose (pg. 5, lines 28-32) that the at least one detector element is at least one of a radiation detector and a pressure transducer.

In regard to claim **3** which is dependent on claim 1, McCaughey *et al.* also disclose (Fig. 2) that the current or voltage pulse is turned off after a specific time  $t = \tau$  (23) the time  $\tau$  lying between the turn-on time  $t = 0$  of the current or voltage pulse and  $T_{MAX}$ .

In regard to claim **9** which is dependent on claim 1, McCaughey *et al.* is applied as in claim 1 above.

In regard to claim **10** which is dependent on claim 9, McCaughey *et al.* is applied as in claim 3 above.

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCaughey *et al.* (WO 96/17239) in view of Aucremanne (US 5,608,219).

In regard to claim 8 which is dependent on claim 1, the sensor of McCaughey *et al.* lacks that the switching device is so operated that a pulse/pause ratio of less than 0.01 is set. Aucremanne teaches (column 10, lines 30-38) to optimize power consumption by adjusting pulse duration and frequency (*i.e.*, pulse/pause ratio). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the pulse/pause ratio in the sensor of McCaughey *et al.*, in order to optimize power consumption.


### ***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SL

  
CONSTANTINE HANNAHER  
PRIMARY EXAMINER  
GROUP ART UNIT 2878